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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

JACKSON, ANDRE K

ART UNIT

PAPER NUMBER

2856

DATE MAILED: 10/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/000,187

Applicant(s)

STAPHANOS, STEPHEN

Examiner

André K. Jackson

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-6,10,12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Itoh in view of Parth and Staffin et al.

Regarding claim 1 Itoh discloses an "Analytical method for the determination of nitrogen, carbon, hydrogen and sulfur or chlorine and apparatus therefore" which has a sample inlet (27), gas inlet (31,8) a sample stream flow controller (49), a gas flow controller (35) a combustion furnace coupled to the sample stream flow controller to receive continuous flow of sample stream and gas the furnace being maintained at a temperature in excess of 680°C, a chiller (cooled tube 50) coupled to the furnace to receive the oxidized material. What is not disclosed by Itoh is a detector coupled to the chiller. However, Parth discloses an "Analytical apparatus" which has a detector (58) coupled to the chiller (54).

Therefore, it would have been obvious to one of ordinary skilled in the art at the time of invention to modify Itoh to include where a detector coupled

to the chiller as taught by Parth since this would give a direct reading of the carbon. It has been noted that neither Itoh nor Parth teaches a continuous carbon measurement. However, Staffin et al. disclose a "Continuous total organic carbon analyzer and method" which teaches a continuous carbon measurement (Abstract). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Itoh to include a continuous carbon measurement as taught by Staffin et al. By adding this feature the user would be able to measure the carbon content without any interruptions.

Regarding claim 2, Itoh discloses a catalyst disposed in the combustion furnace (Column 2).

Regarding claim 3, Itoh discloses where the catalyst is a platinum based catalyst (Column 2).

Regarding claim 4, Itoh does not disclose a where the sample flow controller is a metering pump. However, the gas stream has a pump along with a metering device (37). This shows that one of ordinary skilled in the art could have some type of device to meter on the sample flow controller to monitor how much of the sample is distributed.

Regarding claims 5 and 6, Itoh does not disclose where the metering pump provides a sample flow in the range of approximately 0.5 cc per minute to approximately 2.0 cc per minute. However, Parth et al. discloses where the constant flow rate is 120 cc per second (Column 4).

Parth does not disclose 0.5 cc per minute but the skilled artisan would be able to adjust the flow rate without undue experimentation. Therefore, it is well within the purview of the skilled artisan to modify Itoh at the time of the invention to include where the metering pump provides a sample flow in the range of approximately 0.5 cc per minute to approximately 2.0 cc per minute since they are from the same field of endeavor.

Regarding claim 10, Itoh does not disclose where the output is indicative of total carbon in the sample stream. However, Parth disclose where the output is indicative of total carbon in the sample stream. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Itoh to include where the output is indicative of total carbon in the sample stream since they are from the same field of endeavor.

Regarding claim 12, Itoh discloses a receiving a sample specimen (27) at a sample stream at a pre-selected flow rate (49), receiving a carbon free gas (31,8) at a pre-selected flow rate (35) a combustion furnace couple to the sample stream flow controller to receive a flow of sample stream and gas the furnace being maintained at a temperature in excess of 680°C, a chiller (cooled tube 50) coupled to the furnace to receive the oxidized material. What is not explicitly disclosed by Itoh is measuring a quantity of carbon dioxide generated by the combustion furnace. However, Parth discloses a detector (58) to measure the carbon

dioxide. Therefore, it would have been obvious to one of ordinary skilled in the art at the time of invention to modify Itoh to include where a detector to measure the quantity of carbon dioxide as taught by Parth since this would give the user the knowledge of the amount of carbon from the sample. It is noted that neither Itoh nor Parth teaches a continuous carbon measurement. However, Staffin et al. teaches a continuous carbon measurement (Abstract). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Itoh to include a continuous carbon measurement as taught by Staffin et al. By adding this feature the user would be able to measure the carbon content without any interruptions.

Regarding claim 13, Itoh does not disclose where cooling the oxidized sample stream prior to the step of measuring the carbon dioxide quantity. However, Parth discloses where cooling the oxidized sample stream prior to the step of measuring the carbon dioxide quantity (Figure 1). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Itoh to include where cooling the oxidized sample stream prior to the step of measuring the carbon dioxide quantity since this is important to know in the wastewater industry.

3. Claims 7 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Itoh in view of Parth and Staffin et al. as applied to claim 1 above, and further in view of Suzuki et al.

Regarding claim 7, neither Itoh, Parth nor Staffin et al. disclose a thermoelectric chiller. However, Suzuki et al. disclose a "Method for the removal of carbon dioxide present in gases and absorbent" which has a thermoelectric chiller. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Itoh to include a thermoelectric since this would cool the sample in a faster time period.

Regarding claim 11, neither Itoh, Parth nor Staffin et al. disclose where the output is indicative total organic carbon in the sample stream. However, Suzuki et al. disclose where the output is indicative total organic carbon in the sample stream (Column 6). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Itoh to include where the output is indicative total organic carbon in the sample stream as taught by Suzuki et al. since they are from the same field of endeavor.

4. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Itoh in view of Parth and Staffin et al. as applied to claim 1 above, and further in view of Furlong et al.

Regarding claim 8, neither Itoh, Parth nor Staffin et al. disclose where the detector is a non-dispersive infrared detector. However, Furlong et al. disclose "Selection of a TOC analyzer: analytical considerations" which disclose the use of a non-dispersive infrared detector. Therefore, to modify Itoh to include a non-dispersive infrared

detector, as taught by Furlong et al., would have been clearly within the purview of the skilled artisan since the sensitivity of the instrument is enough to detect both carbon monoxide and carbon dioxide.

Regarding claim 9, neither Itoh, Parth nor Staffin et al. explicitly disclose where the non-dispersive infrared detector outputs a measurement of carbon dioxide in the zero to 100 ppm range. However, Furlong et al. disclose where the non-dispersive infrared detector outputs a measurement of carbon dioxide in the zero to 100 ppm range (Page 2). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Itoh to include where the non dispersive infrared detector outputs a measurement of carbon dioxide in the zero to 100 ppm range as taught by Furlong et al. since this gives the detector a wider range of detecting ability.

5. Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Itoh in view of Parth and Staffin et al. as applied to claim 12 above, and further in view of Suzuki et al.

Regarding claim 14, neither Itoh nor Parth disclose where the carbon dioxide output is indicative total organic carbon in the sample stream. However, Suzuki et al. disclose where the output is indicative total organic carbon in the sample stream. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Itoh to include where the output is indicative total organic carbon in

the sample stream as taught by Suzuki et al. since this modification would help the artisan in the wastewater industry to determine the carbon content.

Regarding claim 15, neither Itoh, Parth nor Staffin et al. disclose where the output is indicative total organic carbon in the each sample stream. However, Suzuki et al. disclose where the output is indicative total organic carbon in each sample stream. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Itoh to include where the output is indicative total organic carbon in each sample stream as taught by Suzuki et al. since this modification would help the artisan in the wastewater industry to determine the carbon content.

Response to Arguments

6. Applicant's arguments with respect to claims 1-15 have been considered but are moot in view of the new ground of rejection.


7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to André K. Jackson whose telephone number is (703) 305-1522. The examiner can normally be reached on Mon.-Thurs. 7AM-4PM.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (703) 305-

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4705. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

A.J. 
September 17, 2003


HEZRON WILLIAMS
SUPERVISORY PATENT EXAMINER
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